

From: "Butner, Gary (CDPH-RHB)" <Gary.Butner@cdph.ca.gov>
To: <susan.durbin@doj.ca.gov>
Date: 8/12/2008 12:41 PM
Subject: FW: Yucca Mt. Impacts Draft for Review
Attachments: OVERVIEW OF CALIFORNIA AGENCIES Oct. 19. Comments.1.11.01.doc

-----Original Message-----

From: Greger, Robert (CDPH-DFDRS-RHB)
Sent: Thursday, July 10, 2008 9:10 AM
To: Butner, Gary (CDPH-RHB)
Subject: FW: Yucca Mt. Impacts Draft for Review

Another email for Brian Hembacher.

-----Original Message-----

From: Greger, Robert (DHS-RHB)
Sent: Tuesday, January 15, 2002 8:37 PM
To: 'bbyron@energy.state.ca.us'
Cc: Bailey, Edgar (DHS-RHB)
Subject: FW: Yucca Mt. Impacts Draft for Review

Barbara- I've made a few corrections/suggestions in "track changes" format on your attachment. Give me a call if you have any questions.

-----Original Message-----

From: Barbara Byron [mailto:Bbyron@energy.state.ca.us]
Sent: Tuesday, January 15, 2002 5:02 PM
To: DPierce@chp.ca.gov; JMcEnulty@chp.ca.gov; Greger, Robert (DHS-RHB); Fain-Keslar, Charleen@DOT; ABurow@dtsc.ca.gov; Ben_Tong@oes.ca.gov; rrichard@OSPR.DFG.CA.GOV
Cc: Terry O'Brien; Terry Surles
Subject: Yucca Mt. Impacts Draft for Review

**** High Priority ****

Attached is the revised draft "CALIFORNIA'S COMMENTS ON DOE'S POSSIBLE APPROVAL OF THE YUCCA MOUNTAIN SITE FOR A HIGH-LEVEL WASTE REPOSITORY". Please e-mail me your comments by Noon tomorrow (Wed.) Thanks for all of your help.

This draft reflects comments provided by California agencies at the Jan. 14 and 15 meetings. The attached comments are divided into Transportation and GW sections for easy review by our two review groups.

DRAFT

CALIFORNIA'S COMMENTS ON DOE'S POSSIBLE APPROVAL OF THE YUCCA MOUNTAIN SITE FOR A HIGH-LEVEL WASTE REPOSITORY

January 15, 2002

Since 1985, California has provided comments on various proceedings and documents for the proposed Yucca Mountain Project, including comments on the Department of Energy's Draft Environmental Impact Statement and comments to DOE in October 2001 on their possible approval of the Yucca Mt. project. The California Energy Commission coordinates a Yucca Mountain Technical Review Group, made up of 13 California transportation, water quality, and environmental agencies.¹ This group met January 14 and 15, 2002, to update the October 2001 comments and prepare a summary list of findings and recommendations regarding DOE's possible approval of the Yucca Mountain site. These findings and recommendations are provided below:

Deleted:

- DOE has provided insufficient information to make a decision on the suitability of the Yucca Mountain Site. The Secretary of Energy should not make a recommendation regarding the suitability of the site until all necessary analyses have been completed. The suitability of the Yucca Mountain site is still in question until the necessary route-specific transportation analyses and scientific studies needed to evaluate potential groundwater impacts in California have been completed.
- This finding is consistent with a December 2001 report by the U.S. General Accounting Office stating that "it may be premature for DOE to make a site recommendation" because of the large number of remaining technical issues that must first be resolved. Recent findings and recommendations by the Nuclear Waste Technical Review Board (an independent review board, that was established by the Nuclear Waste Policy Act as an independent scientific and technical review committee) and the Nuclear Regulatory Commission's Advisory Committee on Nuclear Waste document the large number of unresolved technical issues and problems with DOE's models to assess potential risks from the repository.
- DOE has ignored the majority of California's concerns and requests for additional analyses, as well as concerns and requests made by the Western Governors' Association and Western Interstate Energy Board. For example, DOE stated in 1986 that, "Route-specific analyses and an evaluation of the impacts on host States and States along transportation corridors will be included in the environmental impact statement." Despite this promise and requests by California and other states for these analyses, DOE has not provided them.
- Areas of concern for California are potential groundwater and transportation impacts in California, including uncertainty regarding how water could flow through the

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¹ They include the California Departments of Conservation, Emergency Services, Energy Commission, Fish and Game, Health Services, Highway Patrol, Parks and Recreation, Public Utilities Commission, Toxic Substances Control, Transportation, Water Resources Control Board, Water Resources, and the Lahontan Regional Water Quality Control Board

repository area to the underlying groundwater and isolation of the waste from groundwater for thousands of years. ▾

Deleted: These concerns include

California's concerns include:

1. DOE Has Not Provided an Adequate Analysis of Potential Transportation Impacts.

- Changes in spent fuel shipping cask designs and terrorists' capabilities to attack and destroy targets make it essential that DOE revise their risk analyses for spent nuclear fuel shipments to Yucca Mountain in light of Sept. 11. These analyses must [the word "must" is used here, but in the same comment concerning groundwater, the word "should" is used. Should we not be consistent?] include a revised, more comprehensive assessment of the risk of terrorist attacks and sabotage against repository shipments.
- Transportation impacts are the major component of the project that will affect the most people across the U.S., since DOE proposes transporting 70,000 metric tons of radioactive waste from 131 individual sites to the repository, mostly from eastern states.
- DOE has failed to provide an adequate analysis of the transportation risks and impacts associated with shipments to the repository. For example, DOE has not identified routes and transport modes, evaluated the impacts on route-specific populations and environmental consequences, evaluated the structural sufficiency of roads and railroads and costs for improving and maintaining these routes, the availability and costs of providing timely emergency response capability along shipment corridors over the estimated 40 years of the shipping program, and mitigation proposals to offset these impacts. DOE must identify road, rail, and emergency response improvements needed to protect public health and safety and resources along shipment routes in California, consistent with Section 180© [Is "180©" correct nomenclature?] of the Nuclear Waste Policy Act.
- The total number of shipments anticipated would be unprecedented, increasing from an average of about 15-25 shipments per year to a projected 400-600 shipments per year. Nevada estimates that the potential number of truck shipments to Yucca Mountain through California would be about 74,000 truck shipments of which about three-fourths could traverse southern California under DOE's mostly truck scenario. Under a "mixed truck and rail scenario", California could have more than 26,000 truck shipments and 9,800 rail shipments over this period [The referenced period is not specified].
- Because of California's proximity to Nevada, along with the desire to avoid shipments over Hoover Dam and through Las Vegas, DOE may transport a large majority of these shipments through California into Nevada (potentially 5 truck shipments daily over 39 years).
- California agencies are concerned that DOE may decide to route through California a major portion of the shipments to Yucca Mountain from eastern states. This concern was heightened with DOE's recent decision to reroute through southern

California, near Death Valley, thousands of low-level and transuranic waste shipments to avoid shipments through Las Vegas.

- California's State Park System contains 265 park units encompassing 1.4 million acres of land located along potential spent fuel shipment routes in California. In addition, the Death Valley National Park, visited by 1.25 million people annually, is located adjacent to potential routes in California. DOE should evaluate the potential public health and safety as well as resource impacts on these parks from repository shipments and propose measures to mitigate these impacts.

2. DOE Has Not Provided an Adequate Analysis of Potential Groundwater Impacts.

- DOE should revise their risk analyses for spent fuel management, storage and disposal at the repository in light of the September 11 attacks and the resulting changes in assumptions regarding terrorists' capabilities to attack and destroy targets. These analyses should include a revised, more comprehensive assessment of the potential environmental impacts, including groundwater impacts, from terrorist and sabotage attacks against the proposed repository, particularly attacks against surface facilities.
- Inyo and San Bernardino Counties in California contain major portions of the aquifers through which radionuclides potentially leaking from the proposed Yucca Mountain repository are predicted to travel. Inyo County is within 17 miles from the Yucca Mt. site.
- *The potential contamination of the deep regional aquifer, which appears to underlie both Yucca Mountain and the Tecopa-Shoshone-Death Valley Junction area, poses a significant long-term threat to the citizens and economy of Inyo County. Groundwater research conducted by Inyo County in California and Nye and Esmeralda Counties in Nevada and the USGS indicate a direct connection between water in deep "Lower Carbonate Aquifer" beneath Yucca Mountain and surface discharges (springs) in Death Valley National Park*
- Inyo County has concluded that, as the ultimate resting place of radioactive materials anticipated by DOE's current range of repository designs to escape from the proposed Yucca Mountain Repository, Inyo County, and more specifically the Death Valley National Park, could be the most seriously impacted of all jurisdictions potentially affected by the development, operation and closure of the Yucca Mountain facility.
- A site suitability decision is premature given that key scientific studies regarding waste package corrosion processes are still underway. Comments by the U.S. General Accounting Office, the Nuclear Regulatory Commission, and the Nuclear Waste Technical Review Board demonstrate the high levels of uncertainty regarding the geologic, hydrologic and proposed engineered systems to isolate the wastes from the environment.
- The degree of uncertainty regarding potential groundwater impacts in California is too high to support a recommendation that the Yucca Mountain site is suitable for a permanent, high-level waste repository. Key uncertainties include the rate of

corrosion of waste containers, the potential release of radionuclides into the environment, and the impacts on California from the potential movement of radionuclides from any leaks from the proposed repository.

- California water quality agencies have concluded that DOE needs to perform a more complete evaluation of the potential pathways for radionuclides reaching groundwater supplies in eastern California, such as the Death Valley region and the Amargosa Valley. Better data and more realistic models continue to be needed to evaluate groundwater flow and radionuclide migration toward California aquifers before a determination can be made on the suitability of the proposed Yucca Mountain site.
- The research needed include: (1) better evaluation of the relationship between the perched water and the volcanic aquifer up-gradient from the Yucca Mountain site to help improve the accuracy of the model; one monitoring well clearly is not sufficient to determine water level for the up-gradient model boundary; (2) more accurate determination of the transition zone between the volcanic and the alluvial systems to improve estimates of groundwater travel time between the repository and California aquifers and the predicted concentration of radionuclides within these aquifers; (3) better understanding of groundwater volume and velocity beneath the site; (4) coordination and integration of modeling efforts with the US Geological Survey regional modeling effort that encompasses the area from south of Yucca Mountain to Death Valley; (5) studies to determine the extent to which groundwater flowing under Yucca Mountain discharges into Death Valley and Amargosa Valley; and (6) studies to determine whether the carbonate and volcanic groundwater systems are independent. More studies are needed of the hydrogeologic characterization of the carbonate aquifer in the vicinity of Yucca Mountain. The existing characterization that is based on data from two wells is insufficient to provide reliable interpretation of important hydrogeologic conditions under the Yucca Mountain site; and (7) DOE needs to describe how it will monitor or detect migration of radionuclides from the repository.